

REMARKS

Claims 1-14 are pending in this application. Claims 1-14 stand rejected. By this Amendment, claims 1, 2, 5, and 6 have been amended. The amendments made to the claims do not alter the scope of these claims, nor have these amendments been made to define over the prior art. Rather, the amendments to the claims have been made to improve the form thereof. In light of the amendments and remarks set forth below, Applicants respectfully submit that each of the pending claims is in immediate condition for allowance.

The object of the present invention is to realize optimization of the tilt angles of many antennas with determined procedure within a limited time period. Since the cited references do not disclose such an object, the present application should be allowed.

The present claims differ from Kronestedt and are therefore allowable.

The present claims recite Step 1 and Step 3 for selecting an antenna whose tilt angle should be changed (increased or decreased) from among the antennas of a plurality of cells. Further, Step 6 and Step 7 repeat the tilt angle change (increase or decrease) of the selected antenna.

In contrast, Kronestedt has only the Step for repeating change of the tilt angle of the base station antenna of the Target Cell, as shown in 540 of Fig. 5. Further, claim 2 has Step 8 for further repeating from Step 1 to Step 7.

Claims 3 and 4, include the Steps for changing (increasing or decreasing) the step angle of the tilt angle in accordance with accumulated number of times of repetition.

In contrast, Kronestedt describes that "all candidate antenna tilt angles have been tested" at Line 1 to 14 of Col. 8, so that the Patent of Kronestedt of the cited reference does not possess the means for changing (increasing or decreasing) the step angle in accordance with the number of times of repetition.

As mentioned above, the present claims differ from Kronestedt and is therefore allowable.

Claim 5, includes the Step for selecting the antenna whose tilt angle should be changed based on deterioration rate of coverage of the cell.

Kronestedt only describes that the antenna whose tilt angle is changed is the antenna of the Target Cell. Thus, Kronestedt does not possess the means for selecting antenna to be changed.

Kronestedt only possesses processing for repeating the change (increasing or decreasing) of the tilt angle of the base station antenna of the Target Cell, thus it is only possible to perform the optimization of the tilt angle of the antenna in connection with only individual cell. Even though the tilt angle of the Target Cell is made to optimize individually, it is not possible to realize optimization of the whole radio communication network. Because general radio communication network is constituted by many cells, and deterioration rate of the whole radio communication network is determined in such a state that the tilt angles of the antennas of the plurality of cells are affected mutually.

In contrast, the pending claims select an antenna whose tilt angle should be changed from among many antennas, and then changes the tilt angle of the antenna. Then, processing of selecting and changing is further repeated in the same way as above. By repeating changing of tilt angle of the antenna such a plurality of the cells step by step, that is, by avoiding optimization of individual cell, there is the effect that it

is possible to decrease the deterioration rate of the whole radio communication network in comparison with the case of executing optimization of the tilt angle of the antenna in connection with the individual cell.

Further, the pending claims select an antenna whose tilt angle should be changed from among many antennas, and adds processing for further repeating one series of processing from Step 1 to Step 7 for changing (increasing or decreasing) of the tilt angle, whereby it becomes possible to perform processing for repeating increasing or decreasing of the tilt angle. By such processing, it is possible to enhance probability for approaching to the optimum value, and there is the effect that it is possible to decrease the deterioration rate of the whole radio communication network stably.

As mentioned above, the present claims differ from Kronestedt and are therefore allowable.

Further, in the present invention, since there is possessed the means for changing (increasing or decreasing) the step angle of the tilt angle in accordance with accumulated number of times of repetition of the above, in the case of scheming optimization of the tilt angle of many antennas within the limited time period, there is the effect that optimization result of the tilt angle more excellent than the Patent of Kronestedt is obtained without making trial of the whole "candidate antenna tilt angles".

Hereinafter, the effect is shown with the limited example in which the tilt angle of the antenna of one cell is made large.

When the optimum tilt angle of the antenna 1 is 10 degrees.

All candidate antenna tilt angles of the antenna 1 [degree]: 2, 4, 6, 8, 10, 12 and 14;

Trial example of Kronestedt [degree]: 2, 4, 6, 8 and 10;

Example of the present invention (when accumulated number of times of repetition is 1, the step angle is set to 4 degrees, and when accumulated number of times of repetition is 2 and afterward, the step angle is set to 2 degrees): 2, 6, 8 and 10;

In the example of the present invention, when the number of trial is limited to 4 times, it is possible to make trial of the tilt angle 10 degrees, however, in the example of Kronestedt, it is not possible to make trial of the tilt angle 10 degrees. As a result, in the case of scheming optimization of the tilt angle of many antennas within the limited time period, the present invention has the effect that there is obtained the optimization result of the tilt angle more excellent than the Patent of Kronestedt.

As mentioned above, the present invention has different effect from the Patent of Kronestedt of the cited reference.

Kronestedt only describes that the antenna whose tilt angle is made to change is the antenna of the target cell, thus Kronestedt does not possess the means for selecting the antenna to be changed.

On the contrary, claim 5 includes the step for selecting the antenna whose tilt angle should be changed based on the deterioration rate of the coverage of the cell. As described in the specification, the present invention selects the antenna to be changed while considering the general tendency to which "deterioration rate of the coverage of the antenna" and "increasing/decreasing the tilt angle of the antenna" give "deterioration rate of the coverage of the system". By the present means, it is possible to select the effective antenna for decreasing the deterioration rate of the system from among many antennas.

As mentioned above, the present invention has different effect from Kronestedt of the cited reference.

Applicants have responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

Dated: August 30, 2006

Respectfully submitted,

By 

Ian R. Blum

Registration No.: 42,336

DICKSTEIN SHAPIRO MORIN & OSHINSKY
LLP

1177 Avenue of the Americas
New York, New York 10036-2714
(212) 277-6500
Attorney for Applicants

IRB/mgs